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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,044	11/13/2003	Hirotoshi Otsuki	1403-0258P	7114

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
MAKI, STEVEN D	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/706,044	OTSUKI, HIROTOSHI	
	Examiner	Art Unit	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1) Applicant is advised that should claims 1, 4 be found allowable, claims 6, 8 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claims 1 and 6 have the same scope (both require 0.5-10 parts).

Claims 4 and 8 have the same scope (both require 0.5-10 parts).

2) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3) **Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al (US 6201049) in view of Japan 851 (JP 58-3851) and the admitted prior art (page 9 line 23 to page 10 line 2) and optionally at least one of Lickes et al (US 6426378) and Agostini et al (US 6521691).**

Sakamoto et al discloses a rubber composition for a tire sidewall comprising

100 parts by weight diene rubber;

0.5-2.5 parts by weight wax;

3-7 parts by weight of an **antioxidant** containing 30-100% by weight of **N-(1-methylheptyl)-N'-phenyl-p-phenylenediamine**; and

0.8-1.8 parts by weight sulfur

wherein the diene rubber comprises a combination of 50-80% butadiene rubber and 20-50% natural rubber. See col. 1 lines 49-63, col. 2 lines 7-22. The rubber composition is superior in ozone crack resistance and is resistant to brown and white discoloration. See col. 1 lines 43-46, examples. Sakamoto et al teaches an invention example wherein a rubber sheet comprising the rubber composition was patched on a tire sidewall and then vulcanized to make a tire having a size of 285/75R24.5 (a pneumatic radial tire). The rubber sheet has a thickness of 3.5 mm and a width of 200 mm. See col. 4 lines 32-37. Sakamoto et al does not specifically recite providing the rubber sheet containing diene rubber and the antioxidant N-(1-methylheptyl)-N'-phenyl-p-phenylenediamine with a thickness of 0.5-5 mm and a width of 20-100 mm and locating the rubber sheet on the buttress of a pneumatic tire.

As to claims 1-3 and 6, it would have been obvious to one of ordinary skill in the art to provide Sakamoto et al's rubber sheet containing antioxidant with a thickness of 0.5-5 mm and a width of 20-100 mm

and

locate the rubber sheet on the buttress of a pneumatic tire

since (1) Sakamoto et al suggests locating the rubber sheet, which may have a thickness of 3.5 mm and a width of 200 mm, on a tire sidewall of a pneumatic tire so that the tire has *ozone crack resistance* and resistance to brown and white discoloration and (2) Japan 851 suggests preventing flow *crack* at the edge of a tread rubber layer of a radial tire by locating a rubber sheet containing antioxidant at the buttress of a

pneumatic tire (figure 1) wherein the rubber sheet has a thickness G of 1.5-4.0 mm and a width L of 25-75 mm (figure 2, page 265 top left column).

Furthermore, it would have been obvious to one of ordinary skill in the art to provide Sakamoto's antioxidant **N-(1-methylheptyl)-N'-phenyl-p-phenylenediamine** adsorbed on **silica** as claimed since:

(1) Sakamoto, which teaches that **silica** may be included in the rubber composition (col.3 lines 43-49), suggests using **N-(1-methylheptyl)-N'-phenyl-p-phenylenediamine** such as OZONONE 35 from SEIKO CHEMICAL CO. LTD. as the antioxidant (col. 4 lines 22-24);

(2) the admitted prior art teaches that known antioxidant's available from SEIKO CHEMICAL CO., LTD. include Antioxidant 35 (**N-(1-methylheptyl)-N'-phenyl-p-phenylenediamine**) and Antioxidant 35-PR (**mixture of N-(1-methylheptyl)-N'-phenyl-p-phenylenediamine and silica**, in a solid state at 40°C or lower, proportion of silica: approximately 33% by weight, CTAB absorption amount of silica: 165m^2/g);

and optionally:

(3) (a) Lickes et al, directed to the tire art, suggests using **silica** to absorb antidegradants, which may otherwise migrate to its surface and thereby inhibit, or reduce, interfacial adhesion (col. 4 lines 56-60) and/or (b) Agostini et al, directed to the tire art, suggests using the high absorption capacities of reinforcements such as **silica** to absorb compounding ingredients such as antidegradants to thereby provide a free flowing rubber composition (col. 2 lines 46-67, col. 3 lines 25-32).

As to claims 4, 5 and 8, the admitted prior art teaches that Antioxidant 35-PR has approximately 33% by weight silica.

As to claims 7 and 9, it would have been obvious to use 3-7 parts by weight of antioxidant N-(1-methylheptyl)-N'-phenyl-p-phenylenediamine adsorbed on silica since Sakamoto et al suggests using 3-7 parts antioxidant.

Remarks

4) Applicant's arguments filed 9-23-05 have been fully considered but they are not persuasive.

Applicant argues that there fails to be any basis for a motivation for one skilled in the art to employ the commercially available 8PPD-adsorbed silica (antioxidant 35-PR) in a tire sidewall rubber composition as described by Sakamoto. See page 5 of response filed 9-23-05. This argument is not persuasive. One of ordinary skill in the art would have been motivated to use the commercially available 8PPD silica in a Sakamoto et al's composition for tire sidewall and specifically to use it for Sakamoto et al's antioxidant since (1) Sakamoto et al, directed to the tire art, teaches that the **antioxidant** contains 30-100% by weight of N-(1-methylheptyl)-N'-phenyl-p-phenylenediamine such as *8PPD (OZONONE 35) from Seiko Chemical Co., Ltd.* and (2) the commercially available *8PPD adsorbed silica (Antioxidant 35-PR) from Seiko Chemical Co.*, Ltd. comprises N-(1-methylheptyl)-N'-phenyl-p-phenylenediamine adsorbed on silica. This is especially true since the optional references (Lickes and Agostoni), also directed to the tire art, recommend using silica to absorb antidegradants.

Applicant argues that Lickes and Agostoni merely generally suggest that antioxidants be considered for use in tire rubber compositions. In response, the examiner again notes that the optional references (Lickes and Agostoni), also directed to the tire art, recommend using silica to absorb antidegradants.

Applicant refers to the results in the specification and argues that the employment of 8PPD adsorbed silica results in significantly and advantageously improved ozone cracking resistance property based on the comparative results (comparative examples 5 and 7). The results in the specification have been considered but are not persuasive of non-obviousness. Comparative example 5 does not represent the closest prior art (Sakamoto et al). Comparative example 7 corresponds to Sakamoto et al. However, Example 2 (6 parts antioxidant D, ozone cracking 4.5) fails to show unexpected results over comparative Example 7 (4 parts antioxidant C, ozone cracking 3.5) since Example 2 used 2 parts more antioxidant than was used in Comparative Example 7. The increased ozone cracking can be attributed to the increased amount of antioxidant used *instead of* the type of antioxidant used.

5) No claim is allowed.

6) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
December 9, 2005

STEVEN D. MAKI
PRIMARY EXAMINER